0046430

9209L050-WES-832

RECURRE COPY



ROY F. WESTON, INC. Lionville Laboratory

CLIENT: WESTINGHOUSE HANFORD

SAMPLE(S) RECEIVED: 09-28-92

RFW #: 9209L050

W.O. #: 6168-02-01-9999

INORGANIC NARRATIVE

The following is a summary of the quality control results and a description of any problems encountered during the analysis of this batch of samples:

- All sample holding times as required by 40CFR136 were met.
- 2. All preparation blank results were below the required detection limit.
- 3. All calibration verification checks were within the required control limits of 90-110%. Calibration verification is performed using independent standards.
- 4. Matrix spike recoveries are summarized on the Inorganic Accuracy Report contained within this document. All recoveries were within the 75-125% guidance limits. All %RPD were within the 20% guidance limit.
- 5. Replicate results are summarized on the Inorganic Precision Report contained within this document. All results were within the 20% RPD guidance limit.

otherwise requested, for all inorganic analyses are derived from the USEPA Method for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020) and Standard Methods for the Examination of Water and Wastewater 16 ed. Methods for the analysis of solid samples are derived from Test Methods for Evaluating Solid Waste (USEPA SW846).

J. Peter Hershey, Ph.D.

Laboratory Manager

Lionville Analytical Laboratory

... X01618 PACKAGI 9309 X 050

OFFICE OF SAMPLE MANAGEMENT RECORD OF DISPOSITION

ROD-93-0023

DATE: 2/1/93	LABORATORY: WESTON	
PROJECT TITLE/NO.: 100FR3, 92-307, 92-304 311, 100DR1	, 100KR1, 92-294, 92-	NCR NO.: N/A
SAMPLE IDENTIFICATION NUMBERS:		
B075L6, B07269, B07270, B07259, B07261, B07274, B07275	B07247, B07232, B06D87	7, B01925, B 07 273,
DESCRIPTION OF EVENT:		
Samples contain a large percentage of rock.		
DISPOSITION OF SAMPLES:		
With consent by all project managers, put sample amounts.	ples through sieve and proc	eed with analysis on
		;
		, _
APPROVAL SIGNATURES:	•	
AFFROVAL SIGNATORES:		
Clay Smith/ Clayton fruth		2/1/43
	STROKBEN W. E. Low	1 3/9/93
ORIGINAL ROD LOST W. E. A. D. Krug all Crum H.T. Stankovich, A.L. Prignand, C. E. H.	aid an/	3/9/92
Technical Representative (Print/sign Name)		Date
N/A		
Quality Assurance (Print/Sign Name)		Date

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 10/07/92

CLIENT: WESTINGHOUSE HANFORD WORK ORDER: 6168-02-01-9999

WESTON BATCH #: 9209L050

					REPORTING
SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	LIMIT
=====	=======================================		=======	=====	
-001	BO1925	% Solids	98.5	ક	0.10
		Chromium VI	0.10 u	MG/KG	0.10

8

ROY F. WESTON INC.

INORGANIC PRECISION REPORT 10/07/92

CLIENT: WESTINGHOUSE HANFORD WORK ORDER: 6168-02-01-9999

WESTON BATCH #: 9209L050

			INITIAL		
SAMPLE	SITE ID	ANALYTE	RESULT	REPLICATE	%RPD
	=======================================	# 80 0884004444455			
-001REP	BO1925	% Solids	98.5	98.4	0.12
		Chromium VI	0.10u	0.10u	NC

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Client W	NII K	nouse-Hanford		, 3- 1			Liquid															1
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					Volume	•	Liquid Solid		 			25	inoci	\Box	95 5							1
AD Project Ma	nager	Josie Fallwards	3690		Preserv	ratives																_
ac Clf	De	1 CUD TAT 135 da	4_		ANALY	SES				ANIC		1836	§\$			RG						l
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		7 HISOLOGICA	ł							لــــا	 	WE	STON	Anal	tics (Jse O	niy	1				_
MATRIX CODES: S - Soil SE - Sediment SQ - Solid	Lab ID	Client ID/Description	Cho (s	trix C sen /) MSD	Matrix	Date Collected	Time Collected					<u>Kgr</u>	200		Q175HL							
St Sludge W - Water	L - Sludge / - Water - Oil 601935	1	1	,	9419	IDSI					1	/		/								
O - Oil A - Air															_							
DS - Drum Solids																						
DL - Drum Liquids			1																			_
L - EP/TCLP Leachate																						
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6. Discrepancies Between Samples Labels and COC Record? Y or NOTES: Relinquished by Received Relinquished by Received Date Time Date Time by by EMERY 9 912/12 9/26/ L378

5) Received Within Holding Times

4) Unbroken on Sample (Y) or

COC Record Present Upon Sample Rec't (Y)or N

RFW 21-21-001/A-7/91

L373

L375

L377

Ref# NA

Cooler#_NA

381-596a

CHAIN OF CUSTODY 002023

Company		00000
Custody Form Initiator L. GUERRA	A / R. ARNOLD	
Company Contact K.N. POOL	C.E. HEIDEN	Telephone
Project Designation/Sampling Locat	ions <u>SAF#92-311</u>	Collection Date 9-24-92
SODIUM DICHROMATE BARF	REL. LOCATION 100-IU-4	· · · · · · · · · · · · · · · · · · ·
Ice Chest No. 167		Field Logbook No. WHC-N-205-19
Bill of Lading/Airbill No. 75	21567917	Offsite Property No.
ال Method of Shipment SAMPLE الله Method of Shipment	JBLE BAGGED PLACED IN WET ICE. /	
Shipped to WESTON LAB, LION	WILLE PA 19341	
Possible Sample Hazards/Remarks _	UNKNOWN	-
SEE SAMPLES ANALYSIS REC	QUEST FOR INDIVIDUAL CONTAINERS A	AND ANALYSIS.
	Sample Identification	je !
B01925 (3) B0TTLES		
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/-	25ey2	7-25-9-2
☐ Field Transfer of Custody	CHAIN OF POSSESSION	(Sign and Print Names)
Relinquished by: L.GUERRA	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
Fed EX	Sucrim Brio	alacha ano
Relinquished by:	Received by:	Date/Time:
Relinquished by:	Received by:	Date/Time:
	Final Sample Disposition	_
Disposal Method:	Disposed by:	Date/Time:
Comments:		<u> </u>

W) Wes Han	tinghouse ford Company		SAMPLE ANALYSIS REQUEST 03033	3
Collector L	. GUE	RRA / R.	ARNOLD	Date 9-24-92	
Company Co	ntact	K.N.POOL	/ C.E. HE	EIDEN Telephone (509) 376-2640	
Sample Number	*	Date Collected	Time Collected	Number and Type of Sample Containers/Analysis Requested	
B01925	S	9-24-92	10:21	(1) 250ml Cr+6 (SW-846 7179)	
			<u> </u>	(1) 250ml ICP/GFAA METALS (CLP)	
<u> </u>	1/	·V	<u>V</u>	(1) 1000ml GANMA SPEC. (RL-4303,4304)	
TOTAL	15	OTTLES	$\left(\frac{3}{2}\right)$	<u> </u>	
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*Type of San	nple		r um Liquids um Solids	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	er
Field Inform	ation	SAF#92-3	311 SOE	DIUM DICHROMATE BARREL LOCATION 100-IU-4	
		 			
Special Han	dling	and/or Storaç	e <u>SAMPLES</u>	S TO BE KEPT COOLED TO 4°C PRIOR TO ANALYSIS.	
Possible Sar	mple	Hazards N	ON-DETECTA	ABLE WITH FIELD INSTRUTMENT.	

Contractor

WESTINGHOUSE HANFORD

OFF-SITE PROPERTY CONTROL

COI (To be obtained fro	NTROL NE	JMBER ERTY MA	1ENT)
	J*	,	

. . PART I - TO BE COMPLETED BY ORIGINATOR PROCESSING & ANALYTICAL LAB Section ANALYTICAL CHEMISTRY SAMPLING 8 MOBILE LAB The following items are to be shipped from □ Vendor Routing 器 EMERY AIR EXPRESS X Contractor □ Vendor Shipped to Off-site Custodian WESTON LAB JOSIE KING 208 Welsh Pool Road **Full Title** Lionville, PA 19341 Quantity Description (Include Serial and any Government Tag Numbers) **Original Cost** POLYCOOLER. SAMPLES PACKED IN PLASTIC BAGS AND STORED ON WET SAMPLE #B01925 WEIGHT 5フル COOLER # ☐ Classified XX Unclassified ☐ Shipped Under Contractor's Use Permit Contract Shipped Under DOE Contract Necessity for the Off-Site Use of this Property SAMPLES REQUIRE ANALYSIS THAT ARE NOT PRESENTLY AVAILABLE AT THIS SITE. coc # 03033 BILL OF LADING # 252-1567917

RM Clearance for Public Release	AM	RM Survey No		Date
Location of Property (Area & Bldg.) 200 WEST AREA/202-S	Contact	A. Guerra	· · · · · · · · · · · · · · · · · · ·	Phone (509)373-1907
Date Ready for Shipment 09/25/92	Cost Code to 1	be Charged RG CODE: 12410	Approximate Date T Property will be Retu	his
Originated By L. A. Guerra	Date 09/25/9	Authorized By 2 R. A. Meznari	ch RAM	Date 9/25/92
Signature and Name of Property Control	Custodian Da		t Appróval / / /	Date

Signature of Recipient Return Order No. Date Issued Purchase Order No. Date Issued

Date 9-25-92 1400

RIBU	

<u>By Originator</u> White, Green, Yellow, Pink – Property Management Goldenrod – Retain <u>Shipping Operation - Sign all Copies and Forward to:</u>
White - Property Management Green - Property Control Custodian (Issuing Office)

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FORM OF PAYMENT	-11	92092050	SERVICES.**
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	ING DEPT (509) 376-6665		Chack 5
DEPARTMENT OF E	NERGY C/O	rf weston INC	Shipper
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ROY F. WESTON, INC. LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE

Client: WESTINGHOUSE HANFORD

RFW #: 9209L050

W.O. #: 6168-02-01

Date Received: 09-26-92

CLP METALS

One (1) soil sample was collected on 09-24-92.

The sample and its associated QC samples were analyzed according to criteria set forth in CLP SOW 3/90.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analysis:

- 1. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory.
- 2. All ICV and CCV values were within control limits.
- 3. All ICB and CCB values were within control limits.
- 4. All preparation blank values were within control limits.
- 5. All LCS results were within the 80-120% control limits.
- 6. All matrix spike recoveries were within the 75-125% control limits with the exceptions of manganese and thallium. All exceptions are flagged with a "N" on the CLP forms.
- 7. All duplicate analyses were within the 20% RPD control limit.
- 8. Quarterly Detection Limits, ICP Interelement Correction Factors and ICP Linear Ranges for IC3 are included in this package, but do not appear on EDD:
- 9. The graphite furnace time that appears on form XIV is the time of the first injection. The time that appears on the data is the print time.

J. Peter Hershey, Ph.D. Laboratory Manager

Lionville Analytical Laboratory

Date

ROY F. WESTON, INC. Q Q 1 Q LIONVILLE ANALYTICAL LABORATORY ANALYTICAL CASE NARRATIVE



Client: WESTINGHOUSE HANNFORD

RFW #: 9209L050

W.O. #: 6168-02-01 Date Received: 09-26-92

CLP METALS ADDENDUM

- 1. Following Exhibit E, Section V, Item 10, page E-23 of the USEPA Statement of Work for Inorganics Analysis, Document Number ILM02.0 ICP Instrument Detection Limits (IDLs) are reported for two (2) ICP instruments. The instrument identification numbers are "IC1" and "IC3". The highest IDL for the two instruments is used for reporting concentration values in this sample data package.
- 2. A discrepancy exists between raw data and Form XIVs analytical spikes recovery calculations performed for graphite furnace AA analytes. Instrument software calculates spike recoveries based on absolute values below the IDL for sample results. This is hard-coded by the vendor and is currently not correctable. CLP convention (SOW ILM02.0, Exhibit E, Section V, Item 6, page E-20) requires that when values fall below the IDL, the sample result is equal to zero (0) for the purposes of calculating the percent recovery. The Form XIVs contain the correct calculation.

J. Peter Hershey, Ph.D. Laboratory Manager

Lionville Analytical Laboratory

Date

mlj\clp-met.nar

ROY F. WESTON INC.

INORGANIC PRECISION REPORT 11/05/92

CLIENT: WESTINGHOUSE HANFORD

WORK ORDER: 06168-002-001-9999-00

WESTON BATCH #: 9209L050

			INITIAL		
SAMPLE	SITE ID	ANALYTE	RESULT	REPLICATE	%RPD
======	******		=======	========	======
-001REP	BO1925	Silver, Total	2.0 u	2.0 u	NC
		Aluminum, Total	3730	4190	11.7
		Arsenic, Total	2.0 u	2.0 u	NC
		Barium, Total	43.8	43.8	0.00
		Beryllium, Total	1.0 u	1.0 u	NC
		Calcium, Total	4970	5090	2.5
		Cadmium, Total	1.0 u	1.0 u	NC
		Cobalt, Total	10.2 u	10.2 u	NC
		Chromium, Total	4.4	5.9	29.1
	Copper, Total	12.3	13.0	5.5	
		Iron, Total	9530	11500	18.5
		Potassium, Total	1020 u	1020 u	NC
		Magnesium, Total	2770	3280	16.6
		Manganese, Total	216	250	14.5
		Sodium, Total	1020 u	1020 u	NC
		Nickel, Total	8.9	8.1 u	NC
		Lead, Total	2.4	2.4	0.00
		Antimony, Total	12.2 u	12.2 u	NC
		Selenium, Total	1.0 u	1.Ò u	NC
		-	2.0 u	2.0 u	NC
		Vanadium, Total	13.6	17.2	23.4
		Zinc, Total	27.1	29.5	8.5

ROY F. WESTON INC.

INORGANIC DATA SUMMARY REPORT 11/05/92

CLIENT: WESTINGHOUSE HANFORD

WESTON BATCH #: 9209L050

WORK ORDER: 06168-002-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT
-001	BO1925	Silver, Total		u		2.0
	HOLDES	Aluminum, Total	3730	u	MG/KG	40.6
		Arsenic, Total	2.0	11		2.0
		Barium, Total	43.8	u	MG/KG	40.6
		Beryllium, Total	1.0	,,		1.0
		Calcium, Total	4970	u	MG/KG	_ 1020
				••	MG/KG	1.0
		Cadmium, Total		u	-	
		Cobalt, Total			,	10.2
		Chromium, Total	4.4		MG/KG	2.0
		Copper, Total	12.3		MG/KG	5.1
		Iron, Total	9530		mg/kg	20.3
		Potassium, Total	1020	u	MG/KG	1020
		Magnesium, Total	2770		MG/KG	1020
		Manganese, Total	216		MG/KG	3.0
		Sodium, Total	1020	u		1020
		Nickel, Total	8.9		MG/KG	8.1
		Lead, Total	2.4		MG/KG	0.61
		Antimony, Total	12.2	u		12.2
		Selenium, Total	1.0	u		1.0
		Thallium, Total	2.0	u	MG/KG	2.0
		Vanadium, Total	13.6		MG/KG	10.2
		Zinc, Total	27.1		MG/KG	4.1

EPA SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET

Lab Name: ROY F. WESTON, INC - L372 Contract: 6168-02-01

B01925

Lab Code: WESTON

Case No.: WEST

SAS No.:

SDG No.: CLP050

Matrix (soil/water): SOIL

Lab Sample ID: 920905001

Level (low/med):

LOW

Date Received: 9/28/92

% Solids:

98.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	М
7429-90-5 7440-36-0 7440-38-2 7440-39-3 7440-41-7 7440-43-9 7440-47-3 7440-48-4 7440-50-8 7439-89-6 7439-95-4 7439-95-4 7439-95-7 7782-49-2 7440-22-4 7440-23-5 7440-28-0	Aluminum Antimony Arsenic Barium Beryllium Cadmium Calcium Chromium Cobalt Copper Iron Lead Magnesium Manganese Mercury Nickel Potassium Selenium Silver Sodium Thallium Vanadium Zinc	3730.00 12.20 .93 43.80 .20 1.42 4970.00 4.40 6.30 12.30 9530.00 2.40	ט אטט א אטט אט אטט אט	N	PARAPAPPPPPPRPPFPP
	Cyanide 		_ :		NR

Color Before: BROWN

Clarity Before:

Texture: FINE

Color After:

BROWN

Clarity After:

Artifacts:

Comments:

FORM I - IN

03/90